

## A Study on Emerging Green Finance in India: Its Challenges and Opportunities

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### ABSTRACT

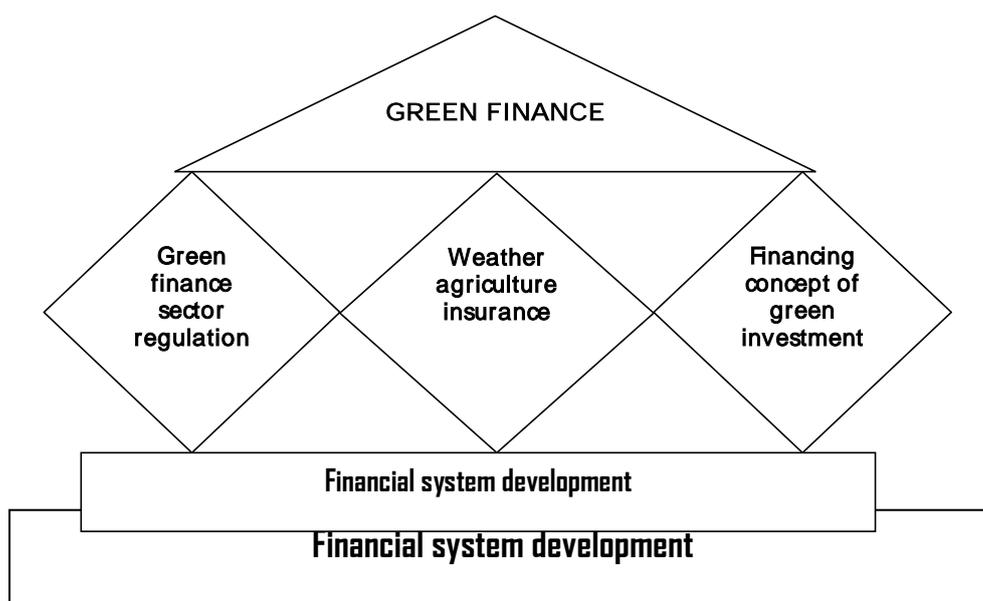
*This article shows the recent trend and future opportunities in green finance in the emerging India. A group of pioneering cities have demonstrated that energy efficiency conserves natural resources, strengthens resilience to meteorological disruptions, and leads to substantial savings in fossil fuel. The promise of green building programs while others have justified increased funding for climate solutions in the hopes that its market will generate “green jobs” Co-operations across the governments at various levels are most important. The national government can support the cities by increasing the funding which suites the energy saving and also locally administrated. The different mandates, expertise, and the multijurisdictional fluidity of most environmental problems, collaboration amongst neighboring municipalities, regions, and the national government, is of paramount importance. By suggesting new policies to the local authorities for the issuance of emission permits and/or for monitoring, reporting and verification of emissions. Perhaps the most common obstacle to the growth of the “green city”, especially during the current economic crisis, is the lack of funding for environmentally friendly infrastructure. Urban climate change policies will have consequences for city’s budgets for which new solutions are required. The sustainable local development can be made through the Green taxes so that more incentives can be provided and also to perform the existing program in an innovative manner. The government can be fiscally sound and innovative programmes and also environmentally good the in the practice of purchasing the green procurement. But also the climatic source of energy plays a vital role. In that water plays a major role because many cities around the world are already facing the importance of water stresses due to large amount of demands. So this paper implicates the valuable suggestions to meet the above all mentioned crises pertaining in our country.*

### Keywords

*Green Indices, Renewable resources, Agriculture and rural activities, Green investment*

### INTRODUCTION

As Climate Change has a drastic cause and effect relationship with agriculture and rural development activities, it has been recognized that activities like forestry, agriculture and other land use activities, viz., dairy, soil conservation, energy use practices, use of renewable energy, etc. have tremendous potential for reducing emission of GHGs. NABARD to address the issue of precious natural resources viz., land and water, had organized a workshop for bankers and other stakeholders on the theme of "Opportunities in Green Finance" Number of issues pertaining to opportunities in Green Finance were deliberated and the workshop threw up several action points for various agencies, which need to be addressed urgently. Climate change and agriculture are interrelated and climate change may have significant effects on crop production and food availability. It is speculated that by 2050, there would not be any glacier in the world. The melting of ice would result in frequent floods and significant rise in sea level etc. It is estimated that transitioning to a low-carbon and climate resilient economy and more broadly „greening growth over the next 20 years will require significant investment and consequently private sources of capital on a much larger scale than previously - particularly given the current state of government finances. Government policies are therefore needed to support the commercialization of new technologies and to correct market failures through carbon. In addition governments and/or multinational agencies can use so-called “Public Financing Mechanisms” to provide cover for risks which are new to pension funds or cannot be covered in existing markets.



**ATTRACTIVE GREEN FINANCE INDICES**

Green indices would identify and pool companies with solid environmental performance or in the green energy generation sector or on the basis of other ‘green’ criteria. They can provide both a benchmark for green performance of companies in general, as well as a benchmark for the financial performance of low carbon companies. It can be classified into three types they are

1. Tracking of companies’ performance in the environmental set and social governance which participates to be the best.]
2. The conceptual work of economic performance of companies within a specific sector . this is said to be as thematic indices
3. The conventional indices that give companies weights according the climatic condition.

The green indices offers

1. Diversification potential
2. Quality control
3. Screening on the basis of a number of green criteria
4. Aggregation of small green investments into large investment opportunities

**GREEN BONDS**

The importance of establishing standardized criteria for project eligibility; having minimum financial characteristics such as size, rating and structure; and applying rigorous governance and due diligence project finance to aid index providers in putting green bonds on a fixed income ‘Green Index’

Rating of bonds	AAA	AAA	BB-CCC	AAA-BBB
Return of bonds	Fixed	Fixed and equity linked	Fixed	fixed

Institutional Investors can access green investments through traditional or alternative asset classes, more specifically through:

*Equity:* Vehicles for green equity investing include indices, mutual funds, and ETFs.

*Fixed-income:* Investors have a choice of “green bonds”, that can be defined as fixed-income securities issued by

governments, multi-national banks or corporations in order to raise capital for green projects.

*Alternative asset classes:* The most common vehicles for green investing are real estate funds and infrastructure funds, which are often organized as private equity vehicles.

**FINANCIAL PRODUCTS-ENVIRONMENTAL BASIS**

'Green' Savings Products	Loans for conversion of vehicles to cleaner fuels.
Energy efficient mortgages	Offer Larger mortgages to individuals who have low energy costs.
Alternative Fuel Conversion	Loans for conversion of vehicles to cleaner fuels
Environmental Technology Leasing	Provide business leases for green technology
Home Office Conversion Loans	Loans for seeking to start home working
Community Housing Loans	Loans for Communal housing/facilities.
Environmentally Sound Construction	Provide lending at favourable terms for such activities
Energy Efficiency Loans	Loans for energy efficient improvements.
Private Transport Finance Packages	Loans for combined transport services, equivalent to but cheaper than a private car
'Green' Investment Products	'Green' saving Accounts for children
'Green' Children Accounts	Saving products where the money is invested in 'Green' projects.

**RENEWABLE ENERGY PROCUREMENT MECHANISMS**



Unquestionably, feed-in tariffs have proven to be the most successful of these policy mechanisms. Feed-in tariffs provide a secure investment environment for clean energy generators by guaranteeing long-term procurement of the energy at a fixed-rate, typically for 10 to 20 years. 75% of global solar photovoltaic power deployment and almost half of global wind deployment. In 2009, the portion of

UK's energy supply from renewable energy hovered at 2 %, a far cry from its goal of 15 % by 2020. The revolutionary transformation of energy sector necessary to the New Green Deal requires an all-hands-on-deck approach that thus far has only been catalyzed through feed-in tariffs.

## INNOVATIVE TECHNOLOGY

- ✦ Jute to be harvested between 100-110 days of sowing. Over matured stalks pose problem of ribboning and are difficult for complete retting resulting in poor yield and inferior quality.
- ✦ Harvested stalks should preferably be ribboned quickly (loss of moisture pose problems during ribboning) with help of the ribboning machine.
- ✦ Ribboning machine has since been improvised by the way of providing 04 additional side/vertical rollers along with two collapsible brackets on either side of the main roller.
- ✦ This has helped in firm placement of the stalks and their easy movement inside the main roller during ribboning.
- ✦ Accordingly, the cost of the machine now stands at Rs.1200/- per machine, i.e. an increment by Rs.200/- per machine. The tank preparation involves checking pH of water (from natural bodies and not from tap) which should be near neutral.

## BLOCKS TO GREEN INVESTMENTS

Even when all the financing measures are in place, physical barriers such as limited access to grid connections can limit the march of green energy. While these are important, this paper will focus on financial, behavioral and information hurdles and friction costs. It highlights the hurdles and subsequent chapters will focus on policy suggestions on how best to overcome these hurdles so as to get an effective implementation of the Green.

The driven factor under the Financial hurdles are current regulations, market practices, financial incentives and risk perceptions. The fact that green investments are overwhelmingly preferable from a societal perspective, the odds in the real world is stacked against them. In order to execute them the four main factors are:-

1. The return on green investments (we would want to increase this).
2. The perceived risk of green investments (we need to reduce this).
3. The return on dirty investments (we would like this to fall).
4. The perceived risk of dirty investments (we want market actors to factor in higher risks).

The poor investments are under price risk in coal fired power plants and even in gas turbines start to break down. This leads to a serious under-estimation of price risk for dirty projects and means that far too much dirty investment than is financially sensible goes through. This

is also known as dirty investment which always paves the way for the under-estimate in price value

Greenhouse gas emissions drive climate change which is overwhelmingly harmful. The average carbon molecule stays in the atmosphere for around 200 years or so and it is the stock of GHG gases that drives global warming. Those emitting GHG gases now are also inflicting a cost on future generations so they also impose an inter-temporal externality.

The climatic risk will not be bear by the investor at any chance of time in green investment. Climate risk refers to both the impact that climate change itself might have on a business's physical assets, such as reduced agricultural productivity caused by a climate-related disaster. But still some investors might come under this risk under due diligence for the long term investment. The climate risk of much form they are physical risk, information risk, cost risk, competitive risk, regulatory risk, reputational risk, climate litigation risk, awareness risk.

## FEW GREEN PROJECTS

1. Energy Efficiency improvement and waste heat utilization projects.
2. Green Housing/ habitat- Rain water harvesting, waste management, renewable/ solar energized, sanitation, eco friendly material.
3. Biomass energy- Bio gas, Rice husk, Sugarcane bagasse /Molasses waste.
4. Biofertiliser/ biopesticide, Azotobactor, Tricoderma, Tricogramma
5. Rural and eco-tourism
6. Improved Jute retting technology
7. Bee keeping
8. Finance projects which address Conservation issues- Prawn hatchery, Fish seed preparation, Ornamental fisheries

## POLICY ADVICE ON ESTABLISHING GREEN FINANCE SYSTEM

Usually the policy environment is depends upon the project size whether its micro level or macro level. In micro level improve the organs and train the talents, especially for establishing agencies. Followed by positive innovation to develop green financial business. The risk management especially for carbon financial management. The flexible operation to cope with the change of green financing mode. As a result financial institution must pay a close attention if there is change in policy matters. Green financial institutions shall coordinate each other, enhance new products and service, carry out education, and

strengthen the capacity of adjustment and response to the change of green financing mode.

At macro level in Asian continent china is in a sound position of green financing. As a result, ministries and commissions concerned shall enhance the harmony, and further establish and improve operation guide and relevant laws and regulations. Usually there is a conflict in green finance and credit. To avoid the barriers the government shall draw up rational preferential policy and should give the incentive to the development of green finance, in the current status the policies and principles are not sufficient. The platform has to create for reducing the transaction cost and also to maintain the environmental energy exchange. Most of the green financial services the professional service of intermediary organs is required for the purpose of project implementation.

## CONCLUSION

### **A Successful Green Project Example: India**

India's energy supply is not able to keep pace with the high economic growth rates in the country. This results in persistent power shortages and frequent power cuts. In order to minimize import dependency in the conventional energy sector, the Indian Government is increasingly focusing on strategies for enhancing energy efficiency and utilizing renewable sources. The main emphasis here is on MSMEs, because of their great importance for the Indian economy and in light of their huge potential for increases in efficiency. Energy efficiency in particular is often neglected by MSMEs due to limited access to technical know-how and appropriate financial products. On behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) GIZ is tapping into these potentials by providing industrial MSMEs in selected regions of India with access to advisory services, training and financing schemes that enable them to implement energy efficiency measures. This allows the companies to increase their competitiveness and simultaneously reduce their negative impact on the environment. The project pursues an integrated approach to scale up energy efficiency measures in the sector by developing and

implementing a specific energy efficiency loan concept with the Small Industries Development Bank of India (SIDBI) and the State Bank of India (SBI) that is complemented by training on sustainability measures for MSMEs. In this way it makes a contribution to growth and environmental sustainability in the Indian MSME sector.

*“Promote sustainable equitable agriculture and rural prosperity through effective credit support, related services, institution development and other innovative initiatives.”*

## BIBLIOGRAPHY

### *Online Reference*

- [1] [www.economictimes.com](http://www.economictimes.com)
- [2] World Bank. 2010. World Bank Green Bond Fact Sheet
- [3] Environmental Finance (2. December 2010 ): <http://www.environmentalfinance.com/news/view/1446>
- [4] <http://www.eif.org>
- [5] <http://history.ieepa.info>

### *Books of Reference*

- [6] Jeucken, M and Bouma, J. 2001. The Changing Environment of Banks: Paper 1.-Sustainable Banking, Greens Leaf Publishing.
- [7] Investment Professionals. Journal of Environmental Assessment, Policy and Management 2 (2) 610-643.
- [8] Kothari.C.R, Research Methodology: Methods & Techniques (2<sup>ND</sup>, New Delhi: Viswa Prakashm,1996)
- [9] Deloitte & touché , 2001.Sustainable banking-The green finance, Greenleaf Publishing.
- [10] Zongwel Luo ,2011.Green finance and Sustainability, Business science reference(IGI global).